# URTICARIA—WITH SPECIAL REFERENCE TO THE CAUSE IN THE PAPULAR FORMS OF CHILDREN.*

By ERNEST DWIGHT CHIPMAN, M. D., San Francisco.

Statistics compiled by the American Dermatological Association, averaging approximately thirty thousand cases annually, and representing prinpally the returns from the larger Eastern centers, offer some interesting bases of comparison with the records of the Pacific Coast. While many of the important dermatoses occur with practically the same relative frequency East and West, there are some marked variations. The most striking divergence is seen in urticaria.

In these records of Eastern cities for the year 1907 the percentage of cases of urticaria was two and five-tenths, while statistics compiled from over eleven hundred consecutive cases in the Cooper College clinic of San Francisco showed a percentage of six, or relatively more than twice as many.

It might be objected that a comparison of one thousand with thirty thousand cases allows too wide a scope for the element of chance variation. The examination of the Eastern statistics, however, dispels this doubt, for considering the returns by cities, whose totals range from five hundred to six thousand cases each, we find the lowest rate to be five per cent and the average of all, as stated, two and one-half per cent.

The fact is, then, that in San Francisco we see relatively twelve times as many cases of hives as in one Eastern city and fifty per cent more than in any Eastern city. How can this difference be explained?

Inasmuch as there are various forms of urticaria, it would seem proper in seeking an answer to this question to inquire if in our cases any one type occurred with special frequency. Urticaria, beside being divided into acute and chronic forms, is classified upon a basis of lesions, such forms being recognized as urticaria papulosa, urticaria bullosa, urticaria hemorrhagica, urticaria factitia, etc. Considered from a strictly lesional standpoint, the primative element is the wheal. In children particularly, however, a form occurs in which the most noticeable lesion is a papule upon the apex of which is an excoriation or a blood-stained crust. Wheals may or may not be present. It is a form which tends especially to chronicity. In England it commonly goes by the name of lichen urticatus or prurigo urticans, while in Germany and Austria it is spoken of as strophulus. Stelwagon mentions it as a rare form in this country, but of our series it has formed by far the largest part.

Our question, therefore, is not why have we more urticarias, but why have we more chronic papular urticarias of children? The answer involves scrutiny of the causes of urticaria.

The causes of urticaria are at best complex. They may be considered as predisposing and exciting. Chief among the predisposing causes must certainly be reckoned a degree of nervous unbalance —a certain excitability of the vosomotor centers which renders them particularly responsive to slight sensorial irritations. This phase of the disease is passed over rather lightly by American authors in comparison with French writers, who dwell at length on nerve insufficiency. Says Merklen in *La Pratique Dermatologique*, "A nervous asthenia is often the origin of urticaria. When it is inherited it is a sort of degeneration or malformation. When it is acquired it commonly follows fatigue, depressing occupations, or occurs in the course of debilitating affections."

In the same article are quoted several curious examples from Alibert, who first described chronic urticaria. First is the account of four young girls of the same family affected with this trouble for some years. They were all chlorotic and probably hysterical. They all had depraved appetites, eating earth, charcoal, candles, etc. Another subject was a young woman who could not enter a drawing-room without suffering with sudden erythematous lesions which prevented her enjoyment of dancing and other recreations. A certain ecclesiastic dared not preside at a service because of eruptions occuring at such times which caused him to scratch with great violence.

Most severe of all was the case of a woman urticarial for ten years, and who could not speak without the development of an urticarial eruption which burned and itched excessively. It does not seem strange that this woman became a profound melancholiac with perverted senses of touch, taste, smell and sight.

In the case of a young man of twenty-eight years who had had hives from infancy, the disease was remarkable for its transition from the skin to the mucous membrane and *vice versa*. As soon as he arrived in a heated atmosphere his gums swelled and his breathing was labored, but the least draft of air relieved him because it caused the eruption to shift to his skin, the change being effected in a few seconds.

It is worth while to recount these cases because, aside from their historical interest, they carry along with them the suggestion of one dominant etiological note, namely an abnormal condition of the nervous system.

The list of exciting causes is so long that it embraces nearly every conceivable sort of irritation either external or internal, from the slightest draft of air—warm or cold—to hydatid cysts. It includes contact with any irritating substance, animal, vegetable or mineral, thermal influences, sunlight, gastro-intestinal intoxication, gastro-intestinal irritability from medicines, dyspepsia or worms, sensorial irritations from asthma, from eye strain or from abnormal conditions in nose or mouth. It is attributed to various infections and intoxications, as malaria, uremia and jaundice. Traumatisms, shock and worry are freely mentioned, as are neuroses such as Basedow's disease, epilepsy, hysteria and neurasthenia.

According to many observers the bites of insects give rise to an urticarial reaction, the lesions occur-

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ing at the point of attack. This corresponds to the "directly provoked urticaria" of Bazin. Kaposi, however, observed that the urticarial eruption may appear at a distance from the original punctures as a result of a reflex irritation. In predisposed subjects this would determine a generalized pruritus together with such an irritability of the skin that the least scratching or even the simple contact with clothing would provoke urticarial wheals.

Kilroy of Springfield, Massachusetts, in a personal communication, relates the case of a boy who suffered from a generalized outbreak of hives following the sting of a wasp.

De Ranse has reported a case involving the upper half of the body after a hornet had stung the esophagus.

Urticarial eruptions following the wounds made by leeches have been reported. If the question arises whether the reaction is of toxic or reflex origin, the fact that such reactions occur more frequently after the application of the leech to the genital or sacrogenital sphere would rather incline one to the theory of reflex origin.

The theory of Wright that urticarial lesions are produced by reason of diminished coagulability of the blood has attracted wide notice. Many practitioners have doubtless prescribed the salts of calcium with the expectation that the old lesions would rapidly fade away and no new crops occur. My personal experience with these salts has been disappointing.

Chenhall, discussing "The Relation of Urticaria to Gynecology," concludes that all cases except those due to local irritation are due to a form of poisoning by toxins in the circulation acting directly on the peripheral vasomotor mechanism or on the endothelial cells of the capillaries, thus producing wheals. He finds it difficult to accept the view that all or even any cases are of reflex origin, nor does he find any warrant for affirming a direct causal relationship between lesions of the reproductive organs and urticaria.

Ravitch emphasizes the part played by the thyroid in the production of chronic urticaria, apparently finding both hyperthyroidism and hypothyroidism causal factors.

The appearance of urticarial eruptions following the injection of diphtheria antitoxin is a matter of common observation, but Walsh reports a post-diphtheritic urticaria in one case in which no antitoxin had been administered.

Hiershberg finds gastric hyperacidity a frequent accompaniment of chronic urticaria and mentions trichinæ and hydatid cysts as occasional causes.

Goldberger and Schamberg report an epidemic occuring around Philadelphia of what they call "straw-mattress urticaria." The lesions were primarily wheals. Upon the summit of the wheals there developed vesicles which later became pustules. A careful investigation showed the exciting cause to be a mite which was isolated from the straw that was used for mattresses.

Jonathan Hutchinson has recently taken the advanced position that urticaria pigmentosa is always due to the bite of some blood-sucking insect, which insect is in nearly all cases the cimex lectularius or common bedbug. He also maintains that the eruptions known as lichen urticatus, our urticaria papulosa, are due to the bites of fleas. "It is certainly a mistake," he says, "to imagine that the local effects of insect punctures are always transitory. The effects vary within very wide limits indeed, in connection with the proclivities of the patient. Another point of great importance is that these attacking insects manifest very marked aptitudes of selective preference. Fleas will attack one child in a family and avoid all the rest, and it is the same with bugs, gnats and flies. A flea may cause in one person only a minute spot of erythema, in another a large urticarial wheal, and in a third a vesicle or even a bulla which might be regarded as 'pemphigus.'"

Certain of our own observations tend materially to confirm these contentions. First of all, San Francisco is notorious as the favorite habitat of the flea. The San Francisco flea is quick to detect the stranger within the gates and for him shows the most distinct selective preference. We invariably propound two questions to the suspected urticarial patient. The first one is "How long has the eruption been present?" and the other is "How long have you been in San Francisco?" The answers to these two questions are in a large proportion of our cases identical. There is such a definite coincidence between the length of residence in San Francisco and the duration of the eruption that a berth in the sleeping-car is often thought by the patient to be the source of infection. It is a particularly striking fact that many cases develop immediately upon their arrival from interior and eastern points, and it can only signify that certain conditions exist here which do not exist at all or to so great an extent elsewhere.

Moreover, in all the cases we have seen for several years each patient has been carefully examined for the typical erythematous spots with punctate center, and not once in the writer's recollection have they been wanting when dealing with the papular form.

The fact that in so many cases of scabies either urticarial wheals or urticaria factitia can be observed is also suggestive of the important part played by animal parasites in the production of real urticarial lesions.

Again, it has been shown that when, in a generalized urticaria, one protects hermetically one part of the body—a leg for example—the urticarial phenomena disappear at once upon that point. What then are the conclusions to be drawn? Not every subject of flea-bite, not every victim of disordered thyroid, not every partaker of shellfish, reacts with an urticarial eruption. Considering all the assignable exciting causes, there is not one which constantly produces the cutaneous reaction: some pre-existing and predisposing cause is necessary. The commonplace explanation is intestinal putrefaction, but it is certainly debatable whether this prevails more in urticarial subjects than in those free from the disease. Moreover, no one who has thoroughly treated many cases of chronic papular

urticaria in children with salines, intestinal antiseptics, etc., can seriously contend that they are in any extended sense successful remedies.

Our disposition is to accept as predisposing cause some condition of nerve insufficiency. What in turn causes that, we do not know. Whether it is a poor inheritance, whether it involves questions of internal secretion or complex problems of biochemistry, or something still more remote, is for us yet to seek.

For the present we consider as efficient causes of the chronic papular urticarias of children two factors, namely, first, a predisposing nerve unbalance—a condition of increased sensitiveness to sensorial irritation—and second, as exciting cause, the sensorial irritation itself.

In San Francisco all children for whom fleas have a liking are bitten. Those children in whom the efficient predisposing cause exists react with a papular urticaria.

**Discussion.**

Dr. E. C. Fleischner, San Francisco: One point of importance is the effect of gastro-intestinal disturbances in these cases. Dr. Porter will agree that we frequently see children in which the gastro-intestinal upset is responsible for the urticaria. This is especially true when the fat content and starch content of the food is too high. It is common in children in the second year when the child is kept on milk and gruels. If you put these children on skim milk and remove the starch in the diet giving vegetables, meat and a dose of calomel these particular children will get over these attacks of urticaria irrespective of flea bites. However, I do think that here in the West fleas play a large part in the etiology.

Dr. H. E. Alderson, San Francisco: The flea is becoming a very important member of the community, particularly since the recent plague troubles, and now the prominence given it in connection with urticaria makes it apparent that we should be more diligent than ever in looking for some means of getting rid of this parasite. All dermatologists agree that the commonest cause, if not the exciting cause, of urticaria is some form of gastro-intestinal indigestion. Every child that is bitten by fleas does not have urticaria, but a large percentage of urticaria cases which appear at the clinics are in children coming from other climes (the East usually), and children with gastro-intestinal troubles. I can confirm what Dr. Chipman has said with regard to the prevalence of lichen urticatus here. I know from my own experience that we see relatively more cases of lichen urticatus here than in Baltimore, Boston or New York. The occurrence of urticaria with asthma is a very interesting thing. The medical man has observed this more than the dermatologist, because the urticaria that develops with or after asthma is a transient affair. Concerning the pathology of the condition, I saw a great deal of work done by Gilchrist in Baltimore, in which he made biopsies or lesions of factitious urticaria, and the conditions observed were dilatation of the vessels with an outpouring of polymorphonuclears with rapid fragmentation of the nuclei, suggesting the presence of some circulating toxin. It has been my observation that urticaria occurs rather frequently in Honolulu in newcomers, and is usually due to the indigestion that develops shortly after arrival there as a result of eating all kinds of fruits and fish and it is often excited by the bite of a tiny ant which is prevalent there. This ant seems to perform the role which the flea plays here.

Dr. Langley Porter, San Francisco: There are two points that have been brought up, one in this paper and one in the discussion of Dr. Fleischner, and they do not seem to me to be in opposition. Dr. Chipman's contention is that the papular urticarias result from local irritations such as flea bites acting upon a skin sensitized by some toxin which unbalances the nervous system. We know rachitic children with intestinal symptoms have this nerve unbalance, which is evidenced by such manifestations as convulsions and laryngismus. The proof that Dr. Chipman's contention is correct is evidenced by the treatment. You cannot cure a papular urticaria simply by remedying the gastro-intestinal condition unless at the same time you get rid of the flea; but you can take children who have definite gastro-intestinal disturbances and put them into bed, protecting the bed from the invasion of fleas by the use of Keating's powder, and the urticaria will promptly clear up and will not return so long as these conditions are maintained in the sleeping quarters.

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## CLINICAL FEATURES OF ENDEMIC GRIPPE IN CHILDREN IN SAN FRANCISCO AND VICINITY.

By SANFORD BLUM, M. S. M. D., San Francisco.

Observations embracing the period from 1898 to the present time have shown that grippe, caused by the Pfeiffer influenza bacillus, is constantly present in San Francisco and the nearby cities. In a large number of acute respiratory affections, studied in private practice and in the Pediatric Clinic of the University of California, influenza bacilli have been identified as the causative agent. Owing to the prevalence of mixed infections and overgrowth by other microorganisms, the isolation of Pfeiffer's bacillus in culture, has been only occasionally successful. I have, however, secured some pure cultures. In smears prepared from sputum, nasal discharge and swabs from the throat, influenza bacilli have been readily identified. In the STATE JOURNAL, September, 1908, Dr. H. C. Moffitt has described the general clinical features of influenza as observed by him in this locality. I shall here indicate the characteristic peculiarities of this disease as it occurs in infancy and childhood in and about San Francisco.

Endemic grippe occurs most frequently in the winter and spring months; but it may appear at any season. Its development is favored by atmospheric variations; rapid changes from wet or foggy condition to hot, sunny weather, with attendant wind and dust, especially favor its development. Fresh cases occur regularly in the clear, sunny and dusty days which succeed each rainy spell during the mild San Francisco winter and early spring. No age is exempt, though cases in early infancy are rare, owing, I believe, to the greater protection from the elements exercised during this period and the comparative isolation from infected individuals. Cases during the first year of life are common, occurring consistently in families where the nurse or some other member of the household, afflicted with the malady, comes into close association with the infant. The majority of cases occur in the first five or six years of life.

The disease is exceedingly infectious, not infrequently attacking one member of a family after another, though all may be exposed at the same time.